

## **STIC Biotechnology Systems Branch**

### **RAW SEQUENCE LISTING** **ERROR REPORT**

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 10/587,389  
Source: IFWP  
Date Processed by STIC: 8/9/06

**THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.**

**PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:**

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,**
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY**

**FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, TELEPHONE: 571-272-2510; FAX: 571-273-0221**

**TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER VERSION 4.4.0 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:**

**<http://www.uspto.gov/web/offices/pac/checker/chkrnote.htm>**

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

- 1. EFS-Bio (<<http://www.uspto.gov/efb/efs/downloads/documents.htm>> , EFS Submission User Manual - ePAVE)**
- 2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**
- 3. Hand Carry, Federal Express, United Parcel Service, or other delivery service (EFFECTIVE 01/14/05):**  
U.S. Patent and Trademark Office, Mail Stop Sequence, Customer Window, Randolph Building, 401 Dulany Street, Alexandria, VA 22314

Revised 01/10/06

## Raw Sequence Listing Error Summary

<u>ERROR DETECTED</u>	<u>SUGGESTED CORRECTION</u>	SERIAL NUMBER: <u>10/587,389</u>
ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE		
1 ___ Wrapped Nucleics Wrapped Aminos	The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor <b>after</b> creating it. Please adjust your right margin to .3; this will prevent "wrapping."	
2 ___ Invalid Line Length	The rules require that a line <b>not exceed</b> 72 characters in length. This includes white spaces.	
3 ___ Misaligned Amino Numbering	The numbering under each 5 <sup>th</sup> amino acid is misaligned. Do <b>not</b> use tab codes between numbers; use <b>space characters</b> , instead.	
4 <u>J</u> ___ Non-ASCII	The submitted file was <b>not</b> saved in ASCII(DOS) text, as <b>required</b> by the Sequence Rules. <b>Please ensure your subsequent submission is saved in ASCII text.</b>	
5 ___ Variable Length	Sequence(s) ___ contain n's or Xaa's representing more than one residue. <b>Per Sequence Rules, each n or Xaa can only represent a single residue.</b> Please present the <b>maximum</b> number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.	
6 ___ PatentIn 2.0 "bug"	A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s) _____. Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. <b>This applies to the mandatory &lt;220&gt;-&lt;223&gt; sections for Artificial or Unknown sequences.</b>	
7 ___ Skipped Sequences (OLD RULES)	Sequence(s) ___ missing. If intentional, please insert the following lines for <b>each</b> skipped sequence: (2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) (i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading) (xi) SEQUENCE DESCRIPTION:SEQ ID NO:X: (insert SEQ ID NO where "X" is shown) This sequence is intentionally skipped Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to <b>include</b> the skipped sequences.	
8 ___ Skipped Sequences (NEW RULES)	Sequence(s) ___ missing. If <b>intentional</b> , please insert the following lines for <b>each</b> skipped sequence. <210> sequence id number <400> sequence id number 000	
9 ___ Use of n's or Xaa's (NEW RULES)	Use of n's and/or Xaa's have been detected in the Sequence Listing. Per 1.823 of Sequence Rules, use of <220>-<223> is <b>MANDATORY</b> if n's or Xaa's are present. In <220> to <223> section, please explain location of <b>n</b> or <b>Xaa</b> , and which residue <b>n</b> or <b>Xaa</b> represents.	
10 ___ Invalid <213> Response	Per 1.823 of Sequence Rules, the only <b>valid</b> <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is <b>required</b> when <213> response is Unknown or is Artificial Sequence. (see item 11 below)	
11 ___ Use of <220>	Sequence(s) ___ missing the <220> "Feature" and associated numeric identifiers and responses. Use of <220> to <223> is <b>MANDATORY</b> if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section or use "chemically synthesized" as explanation. (See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32), also Sec. 1.823 of Sequence Rules	
12 ___ PatentIn 2.0 "bug"	Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.	
13 ___ Misuse of n/Xaa	<b>"n"</b> can <b>only</b> represent a single <u>nucleotide</u> ; <b>"Xaa"</b> can <b>only</b> represent a single <u>amino acid</u>	



IFWP

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/587,389

DATE: 08/09/2006

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

4 <110> APPLICANT: Stefano Colloca  
 5 Alfredo Nicosio  
 6 Elisabetta Sporenno  
 7 Agostino Cirillo  
 8 Bruno Bruni Ercole  
 9 Annalisa Meola  
 11 <120> TITLE OF INVENTION: CHIMPANZEE ADENOVIRUS VACCINE CARRIERS  
 14 <130> FILE REFERENCE: ITR0048YP  
 C--> 16 <140> CURRENT APPLICATION NUMBER: US/10/587,389  
 C--> 16 <141> CURRENT FILING DATE: 2006-07-25  
 16 <150> PRIOR APPLICATION NUMBER: 60/538,799  
 17 <151> PRIOR FILING DATE: 2004-01-23  
 19 <150> PRIOR APPLICATION NUMBER: PCT/EP2005/000558  
 20 <151> PRIOR FILING DATE: 2004-01-18  
 22 <160> NUMBER OF SEQ ID NOS: 125  
 24 <170> SOFTWARE: FastSEQ for Windows Version 4.0

*see item 4 on  
 End summary sheet*

*supp. 2, 4-6, 9-12, 14, 15,  
 17-18*

**Does Not Comply  
 Corrected Diskette Needed**

## ERRORED SEQUENCES

1294 <210> SEQ ID NO: 3  
 1295 <211> LENGTH: 36606  
 1296 <212> TYPE: DNA  
 1297 <213> ORGANISM: Chimpanzee Pan 6 (CV32) Genomic  
 1299 <400> SEQUENCE: 3  
 1300 catcatcaat aatatacctc aaacttttgg tgcgcgttaa tatgcaaag agctgtttga 60  
 1301 atttgaggag ggaggaaggt gattggctgc gggagcggcg accgtaggg gcggggcggg 120  
 1302 tgacgttttg atgacgtggc tatgaggcgg agcgggtttg caagttctcg tgggaaaagt 180  
 1303 gacgtcaaac gaggtgtggg ttgaacacgg aaataactca ttttcccgcg ctctctgaca 240  
 1304 ggaaatgagg tgtttctggg cggatgcaag tgaaaacggg ccattttcgc gcgaaaactg 300  
 1305 aatgaggaag tgaaaatctg agtaatttcg cgtttatggc agggaggagt atttgccgag 360  
 1306 ggccgagtag actttgaccg attacgtggg ggtttcgatt accgtatttt tcacctaaat 420  
 1307 ttccgcgtac ggtgtcaaag tccggtgttt ttacgtaggc gtcagctgat cgccagggtg 480  
 1308 tttaaacctg cgctctctag tcaagaggcc actcttgagt gccagcgagt agagttttct 540  
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 1311 gtgacgacct tccagagccc cctaccccat ttgaggcgcc ttcgctgtac gatttgtagt 720  
 1312 atctggaggt ggatgtgccc gagagcgacc ctaacgagga ggcggtgaat gatttgttta 780  
 1313 gcgatgccgc gctgctggtt gccgagcagg ctaatacgga ctctggctca gacagcgatt 840  
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 1316 aggaggcgat tcgagctgcg gtgaaccagg gagtgaaccac tgcgggcgag agctttagcc 1020  
 1317 tggactgtcc tactctgccc ggacacggct gtaagtcttg tgaatttcat gcgatgaata 1080

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1318 ctggagataa gaatgtgatg tgtgccctgt gctatatgag agcttacaac catttgtgttt 1140
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1320 atttatgtat atgttttttt atgtgtaggt cccgtctctg acgtagatga gacccccact 1260
1321 tcagagtgc a tttcatcacc cccagaaatt ggcgaggaac cgcccgaaga tattattcat 1320
1322 agaccagttg cagtgaagat caccgggcgg agagcagctg tggagagttt ggatgacttg 1380
1323 ctacaggggtg gggatgaacc tttggacttg tgtaccggga aacgcccag gactaagtg 1440
1324 ccacacatgt gtgtttactt aagggtgatgt cagtatttat aggggtgtgga gtgcaataaa 1500
1325 atocgtgttg actttaagtg cgtgttttat gactcagggg tggggactgt gggatatataa 1560
1326 gcaggtgcag acctgtgttg tcagttcaga gcaggactca tggagatctg gactgtcttg 1620
1327 gaagactttc accagactag acagttgcta gagaactcat cggagggagt ctcttacctg 1680
1328 tggagattct gcttcgggtg gcctctagct aagctagtct atagggccaa acaggattat 1740
1329 aaggaacaat ttgaggatat tttgagagag tgtcctggtt tttttgactc tctcaacttg 1800
1330 ggccatcagt ctcaacttta ccagagtatt ctgagagccc ttgacttttc tactcctggc 1860
1331 agaactaccg ccgcggtagc cttttttgcc tttattcttg acaaattggag tcaagaaacc 1920
1332 catttcagca gggattaccg tctggactgc tttagcagtag ctttgtggag aacatggagg 1980
1333 tgccagcgcc tgaatgcaat ctccggctac ttgccagtag agccggtaga cacgtgagg 2040
1334 atoctgagtc tccagtcacc ccaggaacac caacgccgcc agcagccgca gcaggagcag 2100
1335 cagcaagagg aggaccgaga agagaaccgc agagccggtc tggacctcc ggtggcggag 2160
1336 gaggaggagt agctgacttg tttcccgagc tgcgcgggt gctgactagg tcttccagt 2220
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1340 gttggttgga gcccaggat gattgggagg tagccatcag gaattatgcc aagctggctc 2460
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1345 acggatgctc cttctttggc ttcaataaca tgtgcatcga ggccctgggc agtgtttcag 2760
1346 tgaggggatg cagcttttca gccaaactgga tgggggtcgt gggcagaacc aagagcaagg 2820
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1349 ccaaagtcaa gcataacatg atctgtgggg cctcgatga gcgcggctac cagatgctga 3000
1350 cctgcgcgg tgggaacagc catatgctgg ccaccgtgca tgtggcctcg caccgccga 3060
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1356 tgttgtcctg caacgggacg gagttcggct ccagcgggga agaactctgac tagagtga 3420
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1366 gattttaaca cagagctctg aatctttatt tgatttttgc gcgcggtag gccctggacc 4020

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see p. 18  
for error  
explanation

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Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

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Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

E--&gt;

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1417 ctcttcgcgg tccttccagt actcttcgag ggggaacccg tcctgatcgg cacggtaaga 7080
1418 gcccaccatg tagaactggg tgacggcctt gtaggcgcag cagcccttct ccacggggag 7140
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1421 ttggaagtcc gtgcgcttct tgtaggcggg gttaggcaaa gcgaaagtaa catcgttgaa 7320
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1444 gtgagtttga acctgaaaga gagttcgaca gaatcaatct cggtagctgt gacggcggtc 8700
1445 tgccgcagga tctcttgac gtgcgccgag ttgtcctggt aggcgatctc ggtcatgaac 8760
1446 tgctcgatct cctcctcctg aaggtctccg cggcgggcgc gctcgacggt ggccgcgagg 8820
1447 tcgttgagga tgcggcccat gagctgcgag aaggcggtca tgccggcctc gttccagacg 8880
1448 cggctgtaga ccacggctcc gtcgggtcgg cgcgcgcgca tgaccacctg ggcgaggttg 8940
1449 agctcgacgt ggcgcgtgaa gaccgcgtag ttgcagaggc gctggttagag gtagttagac 9000
1450 gtggtggcga tgtgctcggg gacgaagaag tacatgatcc agcggcgagg cggcatctcg 9060
1451 ctgacgtcgc ccagggttcc caagcgttcc atggcctcgt agaagtccac ggcgaagttg 9120
1452 aaaaactggg agttgcgcgc cgagacgggtc aactcctcct ccagaagacg gatgagctcg 9180
1453 gcgatggtgg cgcgcacctc gcgctcgaag gccccggggg gctcctcttc catctcctcc 9240
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1455 gccctgcgtc gccggcgggc caccggcaga cggctcgatga agcgtcgat ggtctccccg 9360
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1457 acgcgcgcgc gcatctccag gtggccgcgc ggggggtctc cgttgggcag ggagagggcg 9480
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1460 aggctgagcc cggtttcttg ttcttcgggt atttggtcgg gaggcgggcg gcgatgctgc 9660
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1462 ccttggggcc ggcttgctgg atgcgcagac ggtcggccat gcccaggcg tggctctgac 9780
1463 acctggcgag gtccttgtag tagtctgca tgagccgctc caccggcacc tctcctcgc 9840
1464 ccgcgcggcc gtgcatgcgc gtgagccgca acccgcgctg cggctggacg agcggcaggt 9900

```

see p. 18

## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

E--&gt;

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1465 cggcgacgac gcgctcggtg aggatggcct gctggatctg ggtgaggggtg gtctggaagt 9960
1466 cgctgaagtc gacgaagcgg tggtaggctc cgggtgtgat ggtgtaggag cagttggcca 10020
1467 tgacggacca gttgacggtc tggtgccggg gtcgcacgag ctcggtgtac ttgaggcgcg 10080
1468 agtaggcgcg cgtgtcgaag atgtagtcgt tgcaggcgcg cacgaggtac tggatatcca 10140
1469 cgaggaagtg cggcgccggc tggcggtaga gcgcccatcg ctcggtggcg gggcgccggg 10200
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1473 tgctctagac atacgggcaa aaacgaaagc ggtcagcggc tcgactccgt ggcctggagg 10440
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1475 cgcagctaac gtggtactgg cactcccgtc tcgacccaag cctgctaacc aaacctccag 10560
1476 gatacgagag cgggtcgttt tttggccttg gtcgctggtc atgaaaaact agtaagcgcg 10620
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1478 gttgcggtgt gccccggttc gagcctcagc gtcggcgccc ggccggattc cgcggctaac 10740
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1492 agcccagagg ccgctggctc ctggacctgg tgaacatttt gcagagcatc gtggtgcagg 11580
1493 agcgcgggct gccgctgtcc gagaagctgg cggccatcaa cttctcggtg ctgagtctgg 11640
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1502 cgattggacc caggccatgc aacgcacat ggcgctgacg acccgcaatc ccgaagcctt 12180
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1508 ctctctgagc acgcagccc ccaacgtgcc ccggggccag gaggactaca ccaacttcac 12540
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1513 cggcagcgtg agccgcgact cgtacctggg ctacctgctt aacctgtacc gcgaggccat 12840

```

see p. 18

## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

E--&gt;

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1515 gggccaggag gacccgggca acctggaggc caccctgaac ttcttgcgta ccaaccggtc 12960
1516 gcagaagatc cgcggccagt acgcgctgag caccgaggag gagcgcatcc tgcgctacgt 13020
1517 gcagcagagc gtggggctgt tcttgatgca ggagggggcc acgcccagcg cggcgctcga 13080
1518 catgaccgcg cgcaacatgg agcccagcat gtacgcccgc aaccgcccgt tcatcaataa 13140
1519 gctgatggac tacttgcatc gggcgggcgc catgaactcg gactacttta ccaacgccat 13200
1520 cttgaacccg cactgggtcc cgccggcccg gttctacacg ggcgagtacg acatgcccca 13260
1521 ccccaacgac ggggttcctgt gggacgacgt ggacagcagc gtgttctcgc cgctccagg 13320
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1523 tcgcgcgggt gctgccgcgg cgggtgccga ggcgcgcagc cccttcccga gectgccctt 13440
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1543 ggcttccac cccgacatcg tctgtctgcc cggctgcggc gtggacttca ccgagagccg 14640
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1545 gtacgagac ctggaggggg gcaacatccc gcgctcttg gatgtcgaag cctacgagaa 14760
1546 aagcaaggag gatagcacg ccgcggcgac cgcagccgtg gccaccgct ctaccgaggt 14820
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1561 gcgcccctca gggccgcgtg cgtcgcgca ccaccgtcga cgacgtgatc gaccaggtgg 15660
1562 tggccgacgc gcgcaactac acgcccgcg ccgcgcccgt ctccaccgtg gacgcccgtc 15720
1563 tcgacagcgt ggtggccgac gcgcgcgggt acgcccgcac caagagccgg cggcggcgca 15780

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## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

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1565 ccaggcgcac gggacgcagg gccatgctca gggcgggccag acgcgcggcc tccggcagca 15900
1566 gcagcgccgg caggaccgcg agacgcgcgg ccacggcggc ggcggcgggc atcgccagca 15960
1567 tgtcccgccc gcggcgcggc aacgtgtact ggggtgcgcga cgccgccacc ggtgtgcgcg 16020
1568 tgcccggtgc caccgcccc cctcgcactt gaagatgctg acttcgcgat gttgatgtgt 16080
1569 cccagcgggc aggaggatgt ccaagcgcaa atacaaggaa gagatgctcc aggtcatcgc 16140
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1571 gcgggtcaaa aaggacaaaa aggaggagga agatgacgga ctggtggagt ttgtgcgcga 16260
1572 gttcgcccc cggcgggcgc tgcagtggcg cggcgggaaa gtgaaaccgg tgctgcggcc 16320
1573 cggcaccacg gtggtcttca cgcccggcga gcgttcggc tccgcctcca agcgtccta 16380
1574 cgacgaggtg tacggggacg aggacatcct cgagcaggcg gtcgagcgte tgggcgagtt 16440
1575 tgcgtacggc aagcgcagcc gcccgcgcgc cttgaaagag gaggcggtgt ccatcccgct 16500
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1611 tggaccgggg ccctagcttc aaacctact ctggcaccgc ctacaacagc ctagctccca 18660
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## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

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1614 aaattggaac tgacgttaca gcgatcaga ataaaccaat ttatgcccac aaaacatttc 18840
1615 aaccagaacc gcaagtagga gaagaaaatt ggcaagaaac tgaaaacttt tatggcggta 18900
1616 gagctcttaa aaaagacaca aacatgaaac cttgctatgg ctctatgct agaccacca 18960
1617 atgaaaaagg aggtcaagct aaacttaaag ttggagatga tggagtcca accaaagaat 19020
1618 tcgacataga cctggctttc tttgatactc ccggtggcac cgtgaacggc caagacgagt 19080
1619 ataaagcaga cattgtcatg tataccgaaa acacgtattt ggaaactcca gacacgcagt 19140
1620 tggatataaa accaggcaag gatgatgcaa gttctgaaat taacctggtt cagcagtcta 19200
1621 tgcccaacag acccaactac attgggttca gggacaactt tatcggctct atgtactaca 19260
1622 acagcactgg caatatgggt gtgcttgctg gtcaggcctc ccagctgaat gctgtggttg 19320
1623 atttgcaaga cagaaacacc gagctgtcct accagctctt gcttgactct ttgggtgaca 19380
1624 gaaccggta tttcagtatg tggaaccagg cgggtggacag ttatgacccc gatgtgcgca 19440
1625 tcatcgaaaa ccattggtgtg gaggatgaat tgccaaacta ttgcttcccc ttggacggct 19500
1626 ctggcactaa cgccgcatac caaggtgtga aagtaaaaga tggatcaagt ggtgatgttg 19560
1627 agagtgaatg ggaaaatgac gatactgttg cagctcgaaa tcaattatgt aaaggtaaca 19620
1628 ttttcgcat ggagattaat ctccaggcta acctgtggag aagtttctc tactcgaaac 19680
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1632 accaccgcaa cggggcctg cgtaccgct ccattgctc gggcaacggg cgtacgtgc 19920
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1634 ggtcctacac ctacgagtgg aacttcgcga aggacgtcaa catgatcctg cagagctccc 20040
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1641 ccttcaagaa ggtctccatc accttcgact cctcgtcag ctggcccggc aacgaccgc 20460
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1644 gctaccaggg cttctacgtg cccgagggtt acaaggaccg catgtactcc ttcttcgca 20640
1645 acttccagcc catgagccgc caggtcgtgg acgaggtcaa ctacaaggac taccaggccg 20700
1646 taccctggc ctaccagcac aacaactcgg gcttcgtcgg ctacctcgcg cccaccatgc 20760
1647 gccagggcca gccctacccc gccactacc cctaccgct catcggaag agcgcgctg 20820
1648 ccagcgtcac ccagaaaaag ttctctgcg accgggtcat gtggcgcac ccttctcca 20880
1649 gcttctcaa tgccactcc gctactttc gctcccaccg cgcgcgcac gagaaggcca 20940
1650 gcaacttcat gtccatgggc gcgctcaccg acctcggcca gaacatgctc tacgccaact 21000
1651 ccgcccacgc gctagacatg aatttcgaag tcgaccccat ggatgagtc acccttctct 21060
1652 atgttgtctt cgaagtctc gacgtcgtcc gactgcacca gcccaccgc ggcgtcatcg 21120
1653 aagcgtcta cctgcgcacg ccttctcgg ccggcaacgc caccaccta ggcgtcttg 21180
1654 cttcttgcaa gatgacggc ggctccggcg agcaggagt cagggccatc ctccgcgacc 21240
1655 tgggtgcg gacctgttc ctgggcacct tcgacaagcg ctccctgga ttcattggcc 21300
1656 cgcacaagct ggctgcgc atcgtgaaca cggccggccg cgagaccggg ggcgagcact 21360
1657 ggctggcctt cgctggaac ccgcgtccc acacatgcta cctcttcgac ccttcgggt 21420
1658 tctcggacga gcgctcaag cagatctacc agttcgagta cgagggcctg ctgctcgca 21480
1659 gcgcccggc caccgaggac cgtgcgtca cctggaaaa gtccaccag accgtgcagg 21540
1660 gtccgcgctc ggccgctgc gggctcttct gctgcatgtt cctgcacgce ttcgtgcact 21600
1661 ggcccgcgcg ccccatggac aagaacccca ccatgaactt actgacgggg gtgcccacg 21660

```

## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

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1662 gcatgctcca gtcgccccag gtggaaccca cctgcgccg caaccaggaa gcgctctacc 21720
1663 ccgccttcga ccgcatgaat caagacatgt aaaaaaccgg tgtgtgtatg tgaatgcttt 21780
1664 attcataata aacagcacat gtttatgcca cttctctga ggctctgact ttatttagaa 21840
1665 atcgaagggg ttctgcccgc tctcgccatg gcccgccggc agggatacgt tgcggaactg 21900
1666 gtacttgggc agccacttga actcgccgat cagcagcttg ggcacgggga ggtcggggaa 21960
1667 cgagtcgctc cacagcttgc gcgtgagttg cagggcgccc agcaggtcgg gcgcggagat 22020
1668 cttgaaatcg cagttgggac ccgcgttctg cgcgcgagag ttgcggtaca cggggttgca 22080
1669 gcaactggaac accatcaggg ccgggtgctt cacgcttgcc agcaccgtcg cgtcggtgat 22140
1670 gccctccacg tccagatcct cggcggttggc catcccgaag ggggtcatct tgcaggtctg 22200
1671 ccgccccatg ctgggcacgc agccgggctt gtggttgcaa tcgcagtga gggggatcag 22260
1672 catcatctgg gcctgctcgg agctcatgcc cgggtacatg gccttcatga aagccttcag 22320
1673 ctggcggaag gcctgctcgc ccttgccgcc ctcggtgaag aagacccgc aggaacttgc 22380
1674 agagaactgg ttggtggcgc agccggcgct gtgcacgcag cagcgcgct cgttgttggc 22440
1675 cagctgcacc acgctgcgcc cccagcggtt ctgggtgatc ttggcccggt tggggttctc 22500
1676 cttcagcgcg cgctgcccgt tctcgctcgc cacatccatc tcgatagtgt gctccttctg 22560
1677 gatcatcacg gtcccgtgca ggcaccgcag cttgcctcg gcttcggtgc agccgtgcag 22620
1678 ccacagcgcg cagccggtgc actcccagtt cttgtggcg atctgggagt gcgagtgcac 22680
1679 gaagccctgc aggaagcggc ccatcatcgc ggtcagggtc ttgttgctgg tgaaggtcag 22740
1680 cgggatgccg cgggtgctct cgttcacata caggtggcag atgcggcggt acacctcgcc 22800
1681 ctgctcgggc atcagctgga aggcggactt caggtcgctc tccacgggt accggtccat 22860
1682 cagcagcgct atcacttcca tgcccttctc ccaggccgaa acgatcgga ggctcagggg 22920
1683 gttcttcacc gccattgtca tcttagtcgc cgcgcgcgag gtcagggggt cgttctcgtc 22980
1684 caggtgtcca aacactcgt tgccgtcctt ctcgatgatg cgcacggggg gaaagctgaa 23040
1685 gccacggcc gccagctcct cctcgccctg ccttctcgtc tcgctgtcct ggctgatgtc 23100
1686 ttgcaaaggc acatgcttgg tcttgccggg tttctttttg ggccgagag gcggcgccga 23160
1687 tgtgctggga gagecgagat tctcgttcac cagactatt tcttcttctt ggccgtcgtc 23220
1688 cgagaccacg cggcggtagg catgctctt ctggggcaga ggccgaggcg accggctctc 23280
1689 gcggttcggc gggcggtcgg cagagccct tccgcgttcg ggggtgcgt cctggcgcg 23340
1690 ctgctctgac tgacttctc cgcggccggc cattgtgttc tctagggag caacaacaag 23400
1691 catggagact cagccatcgt cgccaacat gccatctgcc cccgcgcga ccgccgacga 23460
1692 gaaccagcag cagaatgaaa gcttaaccgc cccgcgcgcc agccccacct ccgacgcgc 23520
1693 ggccccagac atgcaagaga tggaggaaat catcgagatt gacctgggt acgtgacgcc 23580
1694 cgcgagcagc gaggaggagc tggcagcg cttttcagcc ccggaagaga accacaaga 23640
1695 gcagccagag caggaagcag agaaccagca gaaccaggct gggcacgagc atggcgacta 23700
1696 cctgagcggg gcagaggacg tgctcatcaa gcatctggcc cgccaatgca tcactgtcaa 23760
1697 ggacgcgctg ctgcaccgc ccgaggtgcc cctcagcgtg gcggagctca gccgcgcta 23820
1698 cgagcgcaac ctcttctcgc cgcgcgtgcc ccccaagcgc cagcccaacg gcacctgtga 23880
1699 gcccaaccgc cgctcaact tctaccgggt cttcgcggtg cccgaggccc tggccacct 23940
1700 ccacctcttt ttcaagaacc aaaggatccc cgtctcctgc cgcgccaacc gcaccgcgc 24000
1701 cgacgcctg ctcaacctgg gcccggcgcc ccgcctacct gatatcacct ccttggaga 24060
1702 ggttcccaag atcttcgagg gtctgggcag cgacgagact cgggcccga acgctctgca 24120
1703 aggaagcgga gaggagcatg agcaccacag cgcctggtg gaggttggaag gcgacaacgc 24180
1704 gcgcctggcg gtcctcaagc gcacggtcga gctgaccac ttcgctacc cggcgctcaa 24240
1705 cctgcccccc aaggtcatga gcgcgctcat ggaccagggt ctcactaagc gcgcctcgc 24300
1706 cctctcggag gaggagatgc aggacccga gagttcggac gagggaagc ccgtggtcag 24360
E--> 1707 cgacgagcag ctggcgcgct ggctgggagc gagtacc cccagagcc tgggaagagc 24420
1708 gcgcaagctc atgatggcg tggctcgtgt gaccgtggag ctggagtgtc tgcgcgctt 24480
1709 ctttgcgcac gcggagacc tgcgcaaggt cgaggagaac ctgcactacc tcttcaggca 24540
1710 cgggttcgtg cgccaggcct gcaagatctc caacgtggag ctgaccaacc tggctctcta 24600

```

see p. 18

## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

E--&gt;

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1711 catgggcacac ctgcacgaga accgcctggg gcaaaacgtg ctgcacacca ccctgcgcgg 24660
1712 ggaggcccgcc cgcgactaca tccgcgactg cgtctacctg tacctctgcc acacctggca 24720
1713 gacgggcatg ggcgtgtggc agcagtgcct ggaggagcag aacctgaaag agctctgcaa 24780
1714 gctcctgcag aagaacctca aggcctgtg gaccgggttc gacgagcgta ccaccgctc 24840
1715 ggacctggcc gacctcatct tccccgagcg cctgcggctg acgctgcgca acgggctgcc 24900
1716 cgactttatg agccaaagca tgttgcaaaa ctttcgctct ttcactctcg aacgctccgg 24960
1717 gatcctgccc gccacctgct ccgcgctgcc ctgcgacttc gtgccgctga ccttcgcgca 25020
1718 gtgccccccg ccgctctgga gccactgcta cttgctgcgc ctggccaact acctggccta 25080
1719 ccaactcggac gtgatcgagg acgtcagcgg cgagggtctg ctggagtgcc actgccgctg 25140
1720 caacctctgc acgcgcgacc gctccctggc ctgcaacccc cagctgctga gcgagacca 25200
1721 gatcatcggc accttcgagt tgcaaggccc cggcgacggc gagggcaagg ggggtctgaa 25260
1722 actcaccgcc gggctgtgga cctcggccta cttgcgcaag ttcgtgcccg aggactacca 25320
1723 tcccttcgag atcaggttct acgaggacca atcccagccg cccaaggccg agctgtcggc 25380
1724 ctgcgtcatc acccaggggg ccactcctgg ccaattgcaa gccatccaga aatcccgcca 25440
1725 agaatttctg ctgaaaaagg gccacggggt ctacttggac cccagaccg gagaggagct 25500
1726 caaccccagc ttccccagg atgccccgag gaagcagcaa gaagctgaaa gtggagctgc 25560
1727 cgccgcccga ggatttgagg gaagactggg agagcagtca ggcagaggag gaggagatgg 25620
1728 aagactggga cagcactcag gcagaggagg acagcctgca agacagtctg gaggaggaa 25680
1729 acgagggtga ggaggcagag gaagaagcag ccgcgcgacc accgtcgtcc tcggcggaga 25740
1730 aagcaagcag cacggatacc atctccgctc cgggtcgggg tcgcggcggc cgggcccaca 25800
1731 gtaggtggga cgagaccggg cgcttcgcaa cccaccacc cagaccggtg agaaggagcg 25860
1732 gcagggatac aagtcctggc gggggcacia aaacgccatc gtctcctgct tgcaagcctg 25920
1733 cgggggcaac atctccttca cccggcgcta cctgctcttt caccgcgggg tgaacttccc 25980
1734 ccgcaacatc ttgcattact accgtcacct ccacagcccc tactactgtt tccaagaaga 26040
1735 ggcagaaacc cagcagcagc agaaaaccag cggcagcagc agctagaaaa tccacagcgg 26100
1736 cggcagggtg actgaggatc gcggcgaacg agccggcgca gaccggggag ctgaggaacc 26160
1737 ggatctttcc caccctctat gccatcttcc agcagagtgc ggggcaggag caggaaactga 26220
1738 aagtcaagaa ccgttctctg cgctcgctca ccgcagttg tctgtatcac aagagcgaag 26280
1739 accaacttca gcgcactctc gaggacgccc aggtctctct caacaagtac tgcgcgctca 26340
1740 ctcttaaaga gtagcccgcg cccgcccaca caccgaaaaa ggcgggaatt acgtcaccac 26400
1741 ctgcgcctct cgcccgacca tcactgagca agagattccc acgccttaca tgtggagcta 26460
1742 ccagcccgag atgggcctgg ccgcggcgcc cgccaggac tactccacc gcattgaactg 26520
1743 gctcagtgcc gggcccgcga tgatctcacg ggtgaatgac atccgcgccc accgaaacca 26580
1744 gatactccta gaacagtcag cgatcacgc caccgcccgc catcacctta atccgcgtaa 26640
1745 ttggcccgcg gccctggtgt accaggaaat tccccagccc acgaccgtac tacttccgcg 26700
1746 agacgcccag gccgaagtcc agctgactaa ctcaggtgtc cagctggccg gcggcgccgc 26760
1747 cctgtgtcgt caccgccccg ctcagggtat aaagcggctg gtgatccgag gcagaggcac 26820
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1750 ttgctcctcg cagccccgct cgggcggcat cggcactctc cagttcgtgg aggagttcac 27000
1751 tcctcgggtt tacttcaacc ccttctccgg ctccccggc cactaccgg acgagttcat 27060
1752 cccgaacttc gacgccatca gcgagtcggt ggacggctac gattgaatgt cccatgggtg 27120
1753 cgcagctgac ctagctcggc ttgcacacct ggaccactgc cgccgcttcc gctgcttccg 27180
1754 tcgggatctc gccgagtttg cctactttga gctgcccag gaccaccctc agggcccagc 27240
1755 ccacggagtg cggatcatcg tcgaaggggg cctcgactcc cactgcttcc ggatcttcag 27300
1756 ccagcgaccg atcctggtcg agcgcaaca aggacagacc cttcttactt tgtactgcat 27360
1757 ctgcaaccac cccggcctgc atgaaagtct ttgtgtctg ctgtgtactg agtataataa 27420
1758 aagctgagat cagcgactac tccggactcg attgtggtgt tctgtctatc aaccggtccc 27480
1759 tgttcttcac cgggaacgag accgagctcc agctccagt taagccccc aagaagtacc 27540

```

see p. 18

## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

E--&gt;

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1760 tcacctggct gttccagggc tccccgatcg ccgttggtcaa ccactgcgac aacgacggag 27600
1761 tctgtctgag cggccctgcc aaccttactt tttccaccgc cagaagcaag ctccagctct 27660
1762 tccaaccctt cctccccggg acctatcagt gcgtctcagg acctgccat cacaccttcc 27720
1763 acctgatccc gaataccaca gcgcgcgtcc ccgctactaa caaccaaact accaccaaac 27780
1764 gccaccgtcg cgacctttcc tctgaatcta ataccactac cggaggtgag ctccgaggtc 27840
1765 gaccaacctc tgggatttac tacggccctt gggaggtggt ggggttaata gcgctaggcc 27900
1766 tagttgctgg tgggcttttg gttctctgct acctatacct cccttgctgt tctacttag 27960
1767 tgggtgctgtg ttgctggttt aagaaatggg gaagatcacc ctagtgagct gcggtgcgct 28020
1768 ggtggcggtg ttgctttcga ttgtgggact gggcggcgcg gctgtagtga aggagaaggc 28080
1769 cgatccctgc ttgcatttca atcccaacaa atgccagctg agttttcagc ccgatggcaa 28140
1770 tcggtgcgcg gtactgatca agtgccgatg ggaatgcgag aacgtgagaa tcgagtacaa 28200
1771 taacaagact cggacaata ctctcgcgtc cgtgtggcag cccggggacc ccgagtggta 28260
1772 caccgtctct gtccccgggt ctgacggctc cccgcgcacc gtgaataata ctttcathtt 28320
1773 tgcgcacatg tgaacacgg tcatgtggat gagcaagcag tacgatatgt gggcccccac 28380
1774 gaaggagaac atcgtggtct tctccatcgc ttacagcctg tgcacggcgc taatcacgcg 28440
1775 tatcgtgtgc ctgagcattc acatgctcat cgctattcgc cccagaaata atgccagaa 28500
1776 agagaaacag ccataacacg ttttttcaca caccttgttt ttacagacaa tgcgtctgtt 28560
1777 aaatttttta aacattgtgc tcagtattgc ttatgcctct ggttatgcaa acatacagaa 28620
1778 aaccttttat gtaggatctg atggtacact agaggttacc caatcacaag ccaaggttgc 28680
1779 atggtatttt tatagaacca aactgatcc agttaaactt tgaagggtg aattgccgcg 28740
1780 tacacataaa actccactta catttagttg cagcaataat aatcttacac ttttttcaat 28800
1781 taaaaacaaa tatactggta cttattacag taaaaacttt catacaggac aagataaata 28860
1782 ttatactggt aaggtagaaa atcctaccac tcctagaact accaccacca ccactactgc 28920
1783 aaagcccact gtgaaaacta caactaggac caccacaact acagaaacca ccaccagcac 28980
1784 aacacttgct gcaactacac acacacacac taagctaacc ttacagacca ctaatgattt 29040
1785 gatcgccctg ctgcaaaagg gggataacag caccacttcc aatgaggaga tacccaaata 29100
1786 catgattggc attattgttg ctgtagtggt gtgcatgttg atcatgcct tgtgcatggt 29160
1787 gtactatgcc ttctgtaca gaaagcacag actgaacgac aagctggaac acttactaag 29220
1788 tgttgaattt taatttttta gaacctgaa gatcctaggc ctttttagtt tttctatcat 29280
1789 tactctgctc ctttgtgaat cagtggatag agatgttact attaccactg gttctaatta 29340
1790 tacactgaaa gggccaccct caggtatgct ttcgtgggtat tgctattttg gaactgacac 29400
1791 tgatcaaaact gaattatgca attttcaaaa aggcaaaacc tcaaaactta aaatctctaa 29460
1792 ttatcaatgc aatggcactg atctgatact actcaatgtc acgaaagcat atggtggcag 29520
1793 ttattattgc cctggacaaa aactgaaga aatgattttt taaaaagtgg aagtggttga 29580
1794 tcccactaca ccaccacca ccacaactat tcataccaca cacacagaac aaacaccaga 29640
1795 ggcaacagaa gcagagttgg cttccagggt tcacggagat tcttttgctg tcaatacccc 29700
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1797 attagcagtc ataatcatct gcatgttcat ttttgcttgc tgctatagaa ggctttaccg 29820
1798 aaaaaaatca gaccactgc tgaacctcta tgtttaattt tttccagagc catgaaggca 29880
1799 gttagecgtc tagttttttg ttctttgatt ggcattgttt ttaatagtaa aattaccaga 29940
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1801 gaaggtgctc aaaacaccac ctggacaaaa taccatctag gatggagaga tatttgcacc 30060
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1803 cagaatgggt taattaaagg acagagtgtt agtgtgacca gtgatgggtg ctatacccag 30180
1804 catagtttta actacaacat tactgtcata ccactgccta cgcctagccc acctagcact 30240
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1806 gttgccagct cgtctggggc cggagtggca tttttgatgt tggcccatc tagcagtcct 30360
1807 actgctagta ccaatgagca gactactgaa tttttgtcca ctgtcgagag ccacaccaca 30420
1808 gctacctcca gtgccttctc tagcacgcgc aatctctcct cgctttctct tacaccaata 30480

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*see p. 18*

## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

1809 agccccgcta ctactcctag ccccgctcct cttcccactc ccctgaagca aacagacggc 30540  
 1810 ggcattgcaat ggcagatcac cctgctcatt gtgatcgggt tggatcctct ggccgtgttg 30600  
 1811 ctctactaca tcttctgccc ccgcattccc aacgcgcacc gcaagccggc ctacaagccc 30660  
 1812 atcggttatcg ggcagccgga gccgcttcag gtggaagggg gtctaaggaa tcttctcttc 30720  
 E--> 1813 **tcttttacag tatgggtgatt gaantatgat tcctagacaa ttcttgatca ctattcttat** 30780 *see p.18*  
 1814 ctgcctcctc caagtctgtg ccaccctcgc tctgggtggc aacgccagtc cagactgtat 30840  
 1816 tgggccccttc gcctcctacg tgcctcttgc cttcgtcacc tgcattctgt gctgtagcat 30900  
 1817 agtctgcctg cttatcacct tcttccagtt cattgactgg atctttgtgc gcacgccta 30960  
 1818 cctgcgccac cacccccagt accgggacca gcgagtggcg cagctgctca ggctcctctg 31020  
 E--> 1819 **ataagcatgc gggctctgct acttttcgcg cttctgctgt tagtgctccc ccgtcccgtc** 31080 *p.18*  
 1820 gacccccggt ccccccactca gtcccccgag gaggttcgca aatgcaaatt ccaagaaccc 31140  
 1821 tggaaattcc tcaaatgcta ccgcaaaaaa tcagacatgc atcccagctg gatcatgatc 31200  
 1822 attgggatcg tgaacattct ggctgcacc ctcactcctc ttgtgattta cccctgcttt 31260  
 1823 gactttgggt ggaactcgcc agaggcgctc tatctccgcg ctgaacctga cacaccacca 31320  
 1824 cagcatcaac ctcaggcaca cgcactacca ccaccacagc ctaggccaca atacatgcc 31380  
 1825 atattagact atgaggccga gccacagcga cccatgctcc ccgctattag ttacttcaat 31440  
 1826 ctaaccggcg gagatgactg acccactggc caataacaac gtcaacgacc ttctcctgga 31500  
 1827 catggacggc cgcgcctcgg agcagcgact cgcaccaact cgcattcgtc agcagcagga 31560  
 1828 gagagccgtc aaggagctgc aggacggcat agccatccac cagtgcagga gaggcattct 31620  
 1829 ctgcctgggtg aaacaggcca agatctccta cgaggtcacc cagaccgacc atcgctctc 31680  
 1830 ctacgagctc ctgcagcagc gccagaagtt cacctgcttg gtcggagtca accccatcgt 31740  
 1831 catcaccag ccagcagctg ggcgatacca aggggtgcat ccaactgctc tgcgactccc 31800  
 1832 ccgactgcgt ccacactctg atcaagacc tctgcggcct ccgcgacctc ctcccatga 31860  
 1833 actaatcacc cccttatcca gtgaaataaa gatcatattg atgatgattt aaataaaaaa 31920  
 1834 aataatcatt tgatttgaaa taaagataca atcatattga tgatttgagt ttaacaaaaa 31980  
 1835 taaagaatca cttacttgaa atctgatacc aggtctctgt ccatgttttc tgccaacacc 32040  
 1836 acctcactcc cctcttccca gctctggtac tgcaggcccc ggccgggctgc aaacttctc 32100  
 1837 cacacgctga aggggatgtc aaattcctcc tgtccctcaa tcttcatttt atcttctatc 32160  
 1838 agatgtccaa aaagcgcgtc cgggtggatg atgacttcga ccccgctctac cctacgatg 32220  
 1839 cagacaacgc accgaccgtg cccttcatac acccccctt cgtctcttca gatggattcc 32280  
 1840 aagagaagcc cctgggggtg ttgtccctgc tactggctga ccccgctacc accaagaacg 32340  
 1841 gggaaatcac cctcaagctg ggagaggggg tggacctcga ctcgctcgga aaactcatct 32400  
 1842 ccaacacggc caccaaggcc gccgcccctc tcagtatttc aaacaacacc atttccctta 32460  
 1843 aaactgctgc ccctttctac aacaacaatg gaactttaag cctcaatgtc tccacaccat 32520  
 1844 tagcagtatt tcccacattt aacactttag gcataagtct tggaaacggc cttcagactt 32580  
 1845 caaataagtt gttgactgta caactaactc atcctcttac attcagctca aatagcatca 32640  
 1846 cagtaaaaac agacaaaggg ctatatatta actccagtgg aaacagagga cttgaggcta 32700  
 1847 atataagcct aaaaagagga ctagtttttg acggtaatgc tattgcaaca tatattggaa 32760  
 1848 atggcttaga ctatggatct tatgatagtg atggaaaaac aagaccctga attacaaaaa 32820  
 1849 ttggagcagg attaaatttt gatgctaaca aagcaatagc tgtcaacta ggcacagggt 32880  
 1850 taagttttga ctccgctggg gccttgacag ctggaaacaa acaggatgac aagctaacac 32940  
 1851 tttggactac ccctgaccca agccctaatt gtcaattact ttcagacaga gatgccaaat 33000  
 1852 ttactctctg tcttataaaa tgcggtagt c aaatactagg cactgtggca gtggcggctg 33060  
 1853 ttactgtagg atcagcacta aatccaatta atgacacagt caaaagcgcc atagttttcc 33120  
 1854 ttagatttga ttccgatggg gtactcatgt caaactcatc aatggtaggt gattactgga 33180  
 1855 acttttagga gggacagacc actcaaagtg tagcctatac aaatgctgtg ggattcatgc 33240  
 1856 caaatatagg tgcataatcca aaaacccaaa gtaaaacacc taaaaatagc atagtcagtc 33300  
 1857 aggtatattt aactggagaa aactactgac caatgacact aaccataact ttcaatggca 33360  
 1858 ctgatgaaaa agacacaacc ccagttagca cctactctat gacttttaca tggcagtgga 33420

## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

```

1859 ctggagacta taaggacaaa aatattacct ttgtaccacaa ctcattctct ttttcctaca 33480
1860 tcgcccagga ataatcccac ccagcaagcc aacccctttt cccaccacct ttgtctatat 33540
1861 ggaaactctg aaacagaaaa ataaagttca agtgttttat tgaatcaaca gttttacagg 33600
1862 actcgagcag ttatttttcc tccaccctcc caggacatgg aatacaccac cctctcccc 33660
1863 cgcacagcct tgaacatctg aatgccattg gtgatggaca tgcttttggg ctcacggttc 33720
1864 cacacagttt cagagcgagc cagtctcgga tcggtcaggg agatgaaacc ctccgggcac 33780
1865 tcccgcacct gcacctcaca gctcaacagc tgaggattgt cctcggtggg cgggatcacg 33840
1866 gttatctgga agaagcagaa gagcggcggg ggggaatcata gtccgcgaac gggatcggcc 33900
1867 ggtggtgtcg catcaggccc cgcagcagtc gctgccgcgg ccgctccgtc aagctgctgc 33960
1868 tcaggggggt cgggtccagg gactccctca gcatgatgcc cacggccctc agcatcagtc 34020
1869 gtctggtgcg gcgggcgcag cagcgcagtc gaatctcgct caggtcactg cagtacgtgc 34080
1870 aacacaggac caccaggttg ttcaacagtc catagttcaa cacgctccag ccgaaactca 34140
1871 tcgcgggaag gatgctaccc acgtggccgt cgtaccagat cctcaggtaa atcaagtggc 34200
1872 gctccctcca gaagacgctg cccatgtaca tgatctcctt gggcatgtgg cggttcacca 34260
1873 cctcccggtg ccacatcacc ctctggttga acatgcagcc ccggatgatc ctgcggaacc 34320
1874 acagggccag caccgccccg cccgccatgc agcgaagaga ccccggatcc cggcaatgac 34380
1875 aatggaggac ccaccgctcg taccggtgga tcatctggga gctgaacaag tctatgttgg 34440
1876 cacagcacag gcatatgctc atgcatctct tcagcactct cagctcctcg ggggtcaaaa 34500
1877 ccatatccca gggcacgggg aactcttgca ggacagcgaa cccgcagaa cagggcaatc 34560
1878 ctgcacata acttacattg tgcatggaca gggatcgca atcaggcagc accgggtgat 34620
1879 cctccaccag agaagcgcgg gtctcggtct cctcacagcg tggtaagggg gccggccgat 34680
1880 acgggtgatg gcgggacgcg gctgatcggt ttctcgaccg tgtcatgatg cagttgcttt 34740
1881 cggacatttt cgtacttgct gtagcagaac ctggtccggg cgctgcacac cgatcgccgg 34800
1882 cggcggtctc ggcgcttgga acgctcggtg ttaaagttgt aaaacagcca ctctctcaga 34860
1883 ccgtgcagca gatctagggc ctcaggagtg atgaagatcc catcatgcct gatagctctg 34920
1884 atcacatcga ccaccgtgga atgggccagg cccagccaga tgatgcaatt ttgttgggtt 34980
1885 tcggtgacgg cgggggaggg aagaacagga agaaccatga ttaactttta atccaaacgg 35040
1886 tctcgagca cttcaaaatg aaggtcacgg agatggcacc tctcgcccc gctgtgttgg 35100
1887 tggaaaataa cagccaggtc aaaggtgata cggttctcga gatgttccac ggtggcttcc 35160
1888 agcaaaagcct ccacgcgcac atcagaaaca agacaatagc gaaagcggga gggttctcta 35220
1889 attcctcaac catcatgtta cactcctgca ccatccccag ataattttca tttttccagc 35280
1890 cttgaatgat tcgaactagt tctgaggtta aatccaagcc agccatgata aaaagctcgc 35340
1891 gcagagcacc ctccaccggc attcttaagc acaccctcat aattccaaga tattctgctc 35400
1892 ctggttcacc tgcagcagat tgacaagcgg aatatcaaaa tctctgccgc gatccctgag 35460
1893 ctctccctc agcaataact gtaagtactc tttcatatcg tctccgaaat ttttagccat 35520
1894 aggaccccca ggaataagag aagggaagc cacattacag ataaaccgaa gtccccccca 35580
1895 gtgagcattg ccaaagttaa gattgaaata agcatgctgg ctagaccggg tgatatcttc 35640
1896 cagataactg gacagaaaat cgggtaagca atttttaaga aaatcaacaa aagaaaaatc 35700
1897 ttccaggtgc acgtttaggg cctcggaac aacgatggag taagtgcaag ggggtgcgttc 35760
1898 cagcatgggt agttagctga tctgtaaaaa acaaaaaaat aaaacattaa accatgctag 35820
1899 cctggcgaac aggtgggtaa atcgttctct ccagcaccag gcaggccacg ggggtctccgg 35880
1900 cgcgaccctc gtaaaaattg tcgctatgat tgaaaacat cacagagaga cgttcccggg 35940
1901 ggccggcgtg aatgattcga gaagaagcat acaccccccg gaacattgga gtccgtgagt 36000
1902 gaaaaaaagc ggccgaggaa gcaatgaggc actacaacgc tcaactctca gtccagcaaa 36060
1903 gcgatgccat gcggatgaag cacaaaattt tcaggtgctg aaaaaatgta attactcccc 36120
1904 tctgcacag gcagcgaagc tccgatccc tcagatata catacaaagc ctcagcgtcc 36180
1905 atagcttacc gagcggcagc agcagcggca cacaacaggc gcaagagtca gagaaaagac 36240
1906 tgagctataa cctgtccgcc cgctctctgc tcaatatata gccccagatc tacactgacg 36300
1907 taaaggccaa agtctaaaaa taccgccaa ataatacac acgcccagca cagcccaga 36360

```

## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

E--&gt;

```

1908 aaccggtgac acactcagaa aaatacgcgc acttctctcaa acggccaaac tgccgtcatt 36420
1909 tccgggttcc cagctacgt catcaaaaca cgactttcaa attccgtcga ccgttaaaaa 36480
1910 catcaccgcg cccgccccta acggtcgcgc ctcccgcagc caatcacctt cctccctccc 36540
1911 caaattcaaa cagctcattt gcatattaac gcgcaccaa agtttgaggt atattattga 36600
1912 tgatgg                                     36606
3852 <210> SEQ ID NO: 24
3853 <211> LENGTH: 2883
3854 <212> TYPE: DNA
3855 <213> ORGANISM: Chimpanzee Adenovirus- ChAd 17 Hexon
3857 <400> SEQUENCE: 24
3858 atgacgaccc catcgatgat gccgcagtggt tcgtacatgc acatctcggg ccaggacgcc 60
3859 tcgagtagtacc tgagcccccgg gctgggtgcag tgcgcccgcg ccaccgagag ctacttcagc 120
3860 ctgagtaaca agtttaggaa cccacgggtg gcgcccacgc acgatgtgac caccgaccgg 180
3861 tctcagcgcc tgacgctgcg gttcattccc gtggaccgcg aggacaccgc gtactcgtac 240
3862 aaggcgcggt tcaccctggc cgtggggcgac aaccgcgtgc tggacatggc ctccacctac 300
3863 tttgacatcc gcggggtgct ggaccggggt cccactttca agccctactc tggcaccgcc 360
3864 tacaactccc tggcccccaa gggcgctccc aactcctgcg agtgggagca agaggaaact 420
3865 caggcagttg aagaagcagc agaagaggaa gaagaagatg ctgacggtca agctgaggaa 480
3866 gagcaagcag ctacaaaaaa gactcatgta tatgctcagg ctcccccttc tggcgaaaaa 540
3867 attagtaaa atggtctgca aataggaacg gacgctacag ctacagaaca aaaacctatt 600
3868 tatgcagacc ctacattcca gcccgaaacc caaatcgggg agtcacagtg gaatgaggca 660
3869 gatgctacag tcgcccggcg tagagtgcta aagaaatcta ctcccatgaa accatgctat 720
3870 ggttcctatg caagaccac aaatgcta atggaggtcagg gtgtactaac ggcaaatgcc 780
3871 caggacagc tagaatctca ggttgaaatg caattctttt caacttctga aaacgcccgt 840
3872 aacgagacta acaacattca gcccaaattg gtgctgtata gtgaggatgt gcacatggag 900
3873 accccggata cgcacctttc ttacaagccc gcaaaaagcg atgacaattc aaaaatcatg 960
3874 ctgggtcagc agtccatgcc caacagacct aattacatcg gcttcagaga taactttatc 1020
3875 ggccctcatg attacaatag cactggcaac atgggagtg tgcagggtca ggccctctcag 1080
3876 ttgaatgcag tgggtggactt gcaagacaga aacacagaac tgctctacca gctcttgctt 1140
3877 gattccatgg gtgacagaac cagatacttt tccatgtgga atcaggcagt ggacagttat 1200
3878 gaccacagat ttagaattat tgaaaatcat ggaactgaag acgagctccc caactattgt 1260
3879 ttccctctgg gtggcatagg ggttaactgac acttaccagg ctgttaaaac caacaatggc 1320
3880 aataacgggg gtcagggtgac ttggacaaaa gatgaaactt ttgcagatcg caatgaaata 1380
3881 ggggtgggaa acaatttcgc tatggagata aacctcagtg ccaacctgtg gagaaacttc 1440
3882 ctgtactcca acgtggcgct gtacctacca gacaagctta agtacaacc cccaatgtg 1500
3883 gacatctctg acaaccccaa cacctacgat tacatgaaca agcgagtggg ggccccgggg 1560
3884 ctgggtggact gctacatcaa cctgggcgcg cgctggtcgc tggactacat ggacaacgtc 1620
3885 aacccttca accaccaccg caatgcgggc ctgcgtacc gctccatgct cctgggcaac 1680
3886 gggcgctacg tgcccttcca catccaggtg cccagaagt tctttgccat caagaacctc 1740
3887 ctctcctgc cgggctccta cacctacgag tggaaactta ggaaggatgt caacatggtc 1800
3888 ctccagagct ctctgggtaa cgatctcagg gtggacgggg ccagcatcaa gttcgagagc 1860
3889 atctgcctct acgccacctt cttccccatg gccacaaca cggcctccac gctcgaggcc 1920
3890 atgctcagga acgacaccaa cgaccagtc tcaatgact acctctccgc cgccaacatg 1980
3891 ctctacccca taccgccea cgccaccaac gtcccatct ccatccctc gcgcaactgg 2040
3892 gcggccttcc gcggtgggc cttcacccgc ctcaagacca aggagacccc ctccctgggc 2100
3893 tcgggattcg accctacta cacctactcg ggtccattc cctacctgga cggcaccttc 2160
3894 tacctcaacc acactttcaa gaaggtctcg gtcacctcg actcctcggg cagctggccg 2220
3895 ggcaacgacc gtctgtcac cccaacgag ttcgagatca agcgctcggg cgacggggag 2280
3896 ggctacaacg tggcccagtg caacatgacc aaggactggg tctggtcca gatgctggcc 2340

```

see p. 18



## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:36

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

```

3897 aactacaaca tcggctacca gggcttctac atcccagaga gctacaagga caggatgtac 2400
3898 tccttcttca ggaacttcca gcccatgagc cggcaggtgg tggaccagac caagtacaag 2460
3899 gactaccagg aggtgggcat catccaccag cacaacaact cgggcttcgt gggctacctc 2520
3900 gccccacca tgccgaggg acaggcctac cccgccaact tcccctatcc gctcataggc 2580
3901 aagaccgagg tcgacagcat caccagaaa aagttcctct gcgaccgcac cctctggcgc 2640
3902 atccccttct ccagcaactt catgtccatg ggtgcgctct cggacctggg ccagaacttg 2700
3903 ctctacgcca actccgcca cgccctcgac atgaccttcg aggtcgaccc catggacgag 2760
3904 cccacccttc tctatgttct gttcgaagtc tttgacgtgg tccgggtcca ccagccgcac 2820
3905 cggggcgta tcgagaccgt gtacctgcgt acgcccttct cggccggcaa cgccaccacc 2880
3906 taa 2883

```

10532 &lt;210&gt; SEQ ID NO: 125

10533 &lt;211&gt; LENGTH: 933

10534 &lt;212&gt; TYPE: PRT

10535 <213> ORGANISM: Chimpanzee Adenovirus- CV68 Hexon *ref. 17*

10537 &lt;400&gt; SEQUENCE: 125

```

10538 Met Ala Thr Pro Ser Met Leu Pro Gln Trp Ala Tyr Met His Ile Ala
10539 1 5 10 15
10540 Gly Gln Asp Ala Ser Glu Tyr Leu Ser Pro Gly Leu Val Gln Phe Ala
10541 20 25 30
10542 Arg Ala Thr Asp Thr Tyr Phe Ser Leu Gly Asn Lys Phe Arg Asn Pro
10543 35 40 45
10544 Thr Val Ala Pro Thr His Asp Val Thr Thr Asp Arg Ser Gln Arg Leu
10545 50 55 60
10546 Thr Leu Arg Phe Val Pro Val Asp Arg Glu Asp Asn Thr Tyr Ser Tyr
10547 65 70 75 80
10548 Lys Val Arg Tyr Thr Leu Ala Val Gly Asp Asn Arg Val Leu Asp Met
10549 85 90 95
10550 Ala Ser Thr Tyr Phe Asp Ile Arg Gly Val Leu Asp Arg Gly Pro Ser
10551 100 105 110
10552 Phe Lys Pro Tyr Ser Gly Thr Ala Tyr Asn Ser Leu Ala Pro Lys Gly
10553 115 120 125
10554 Ala Pro Asn Thr Cys Gln Trp Thr Tyr Lys Ala Asp Gly Glu Thr Ala
10555 130 135 140
10556 Thr Glu Lys Thr Tyr Thr Tyr Gly Asn Ala Pro Val Gln Gly Ile Asn
10557 145 150 155 160
10558 Ile Thr Lys Asp Gly Ile Gln Leu Gly Thr Asp Thr Asp Asp Gln Pro
10559 165 170 175
10560 Ile Tyr Ala Asp Lys Thr Tyr Gln Pro Glu Pro Gln Val Gly Asp Ala
10561 180 185 190
10562 Glu Trp His Asp Ile Thr Gly Thr Asp Glu Lys Tyr Gly Gly Arg Ala
10563 195 200 205
10564 Leu Lys Pro Asp Thr Lys Met Lys Pro Cys Tyr Gly Ser Phe Ala Lys
10565 210 215 220
10566 Pro Thr Asn Lys Glu Gly Gly Gln Ala Asn Val Lys Thr Gly Thr Gly
10567 225 230 235 240
10568 Thr Thr Lys Glu Tyr Asp Ile Asp Met Ala Phe Phe Asp Asn Arg Ser
10569 245 250 255
10570 Ala Ala Ala Ala Gly Leu Ala Pro Glu Ile Val Leu Tyr Thr Glu Asn
10571 260 265 270

```

## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:37

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

```

10572 Val Asp Leu Glu Thr Pro Asp Thr His Ile Val Tyr Lys Ala Gly Thr
10573      275      280      285
10574 Asp Asp Ser Ser Ser Ser Ile Asn Leu Gly Gln Gln Ala Met Pro Asn
10575      290      295      300
10576 Arg Pro Asn Tyr Ile Gly Phe Arg Asp Asn Phe Ile Gly Leu Met Tyr
10577 305      310      315      320
10578 Tyr Asn Ser Thr Gly Asn Met Gly Val Leu Ala Gly Gln Ala Ser Gln
10579      325      330      335
10580 Leu Asn Ala Val Val Asp Leu Gln Asp Arg Asn Thr Glu Leu Ser Tyr
10581      340      345      350
10582 Gln Leu Leu Leu Asp Ser Leu Gly Asp Arg Thr Arg Tyr Phe Ser Met
10583      355      360      365
10584 Trp Asn Gln Ala Val Asp Ser Tyr Asp Pro Asp Val Arg Ile Ile Glu
10585      370      375      380
10586 Asn His Gly Val Glu Asp Glu Leu Pro Asn Tyr Cys Phe Pro Leu Asp
10587 385      390      395      400
10588 Ala Val Gly Arg Thr Asp Thr Tyr Gln Gly Ile Lys Ala Asn Gly Thr
10589      405      410      415
10590 Asp Gln Thr Thr Trp Thr Lys Asp Asp Ser Val Asn Asp Ala Asn Glu
10591      420      425      430
10592 Ile Gly Lys Gly Asn Pro Phe Ala Met Glu Ile Asn Ile Gln Ala Asn
10593      435      440      445
10594 Leu Trp Arg Asn Phe Leu Tyr Ala Asn Val Ala Leu Tyr Leu Pro Asp
10595      450      455      460
10596 Ser Tyr Lys Tyr Thr Pro Ala Asn Val Thr Leu Pro Thr Asn Thr Asn
10597 465      470      475      480
10598 Thr Tyr Asp Tyr Met Asn Gly Arg Val Val Ala Pro Ser Leu Val Asp
10599      485      490      495
10600 Ser Tyr Ile Asn Ile Gly Ala Arg Trp Ser Leu Asp Pro Met Asp Asn
10601      500      505      510
10602 Val Asn Pro Phe Asn His His Arg Asn Ala Gly Leu Arg Tyr Arg Ser
10603      515      520      525
10604 Met Leu Leu Gly Asn Gly Arg Tyr Val Pro Phe His Ile Gln Val Pro
10605      530      535      540
10606 Gln Lys Phe Phe Ala Ile Lys Ser Leu Leu Leu Leu Pro Gly Ser Tyr
10607 545      550      555      560
10608 Thr Tyr Glu Trp Asn Phe Arg Lys Asp Val Asn Met Ile Leu Gln Ser
10609      565      570      575
10610 Ser Leu Gly Asn Asp Leu Arg Thr Asp Gly Ala Ser Ile Ser Phe Thr
10611      580      585      590
10612 Ser Ile Asn Leu Tyr Ala Thr Phe Phe Pro Met Ala His Asn Thr Ala
10613      595      600      605
10614 Ser Thr Leu Glu Ala Met Leu Arg Asn Asp Thr Asn Asp Gln Ser Phe
10615      610      615      620
10616 Asn Asp Tyr Leu Ser Ala Ala Asn Met Leu Tyr Pro Ile Pro Ala Asn
10617 625      630      635      640
10618 Ala Thr Asn Val Pro Ile Ser Ile Pro Ser Arg Asn Trp Ala Ala Phe
10619      645      650      655
10620 Arg Gly Trp Ser Phe Thr Arg Leu Lys Thr Lys Glu Thr Pro Ser Leu

```

## RAW SEQUENCE LISTING

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:37

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

```

10621          660          665          670
10622 Gly Ser Gly Phe Asp Pro Tyr Phe Val Tyr Ser Gly Ser Ile Pro Tyr
10623          675          680          685
10624 Leu Asp Gly Thr Phe Tyr Leu Asn His Thr Phe Lys Lys Val Ser Ile
10625          690          695          700
10626 Thr Phe Asp Ser Ser Val Ser Trp Pro Gly Asn Asp Arg Leu Leu Thr
10627 705          710          715          720
10628 Pro Asn Glu Phe Glu Ile Lys Arg Thr Val Asp Gly Glu Gly Tyr Asn
10629          725          730          735
10630 Val Ala Gln Cys Asn Met Thr Lys Asp Trp Phe Leu Val Gln Met Leu
10631          740          745          750
10632 Ala His Tyr Asn Ile Gly Tyr Gln Gly Phe Tyr Val Pro Glu Gly Tyr
10633          755          760          765
10634 Lys Asp Arg Met Tyr Ser Phe Phe Arg Asn Phe Gln Pro Met Ser Arg
10635          770          775          780
10636 Gln Val Val Asp Glu Val Asn Tyr Lys Asp Tyr Gln Ala Val Thr Leu
10637 785          790          795          800
10638 Ala Tyr Gln His Asn Asn Ser Gly Phe Val Gly Tyr Leu Ala Pro Thr
10639          805          810          815
E--> 10640 Met Arg Gln Gly Gln Pro Tyr Pro Ala Xaa Tyr Pro Tyr Pro Leu Ile
10641          820          825          830
10642 Gly Lys Ser Ala Val Thr Ser Val Thr Gln Lys Lys Phe Leu Cys Asp
10643          835          840          845
10644 Arg Val Met Trp Arg Ile Pro Phe Ser Ser Asn Phe Met Ser Met Gly
10645          850          855          860
10646 Ala Leu Thr Asp Leu Gly Gln Asn Met Leu Tyr Ala Asn Ser Ala His
10647 865          870          875          880
10648 Ala Leu Asp Met Asn Phe Glu Val Asp Pro Met Asp Glu Ser Thr Leu
10649          885          890          895
10650 Leu Tyr Val Val Phe Glu Val Phe Asp Val Val Arg Val His Gln Pro
10651          900          905          910
E--> 10652 His Arg Gly Val Ile Glu Ala Val Tyr Xaa Arg Thr Pro Phe Ser Ala
10653          915          920          925
10654 Gly Asn Ala Thr Thr
10655          930
E--> 10658 - 1 -

```

see p. 18

delete

## VARIABLE LOCATION SUMMARY

DATE: 08/09/2006

PATENT APPLICATION: US/10/587,389

TIME: 10:06:38

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

*error explanation*Use of n's or Xaa's (NEW RULES):

Use of n's and/or Xaa's have been detected in the Sequence Listing.

Use of &lt;220&gt; to &lt;223&gt; is MANDATORY if n's or Xaa's are present.

in &lt;220&gt; to &lt;223&gt; section, please explain location of n or Xaa, and which residue n or Xaa represents.

Seq#:3; N Pos. 3592,7705,11272,11275,15203,24396,27010,28655,30744,31045

Seq#:24; N Pos. 63 / / /

Seq#:125; Xaa Pos. 826,922

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/587,389

DATE: 08/09/2006

TIME: 10:06:38

Input Set : N:\SSLM\10587389.txt

Output Set: N:\CRF4\08092006\J587389.raw

L:16 M:270 C: Current Application Number differs, Replaced Current Application No  
L:16 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:1359 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:3  
M:340 Repeated in SeqNo=3  
L:3859 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:24  
L:10640 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:125  
M:340 Repeated in SeqNo=125  
L:10658 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:125